

What is claimed is:

- 1 1. A device comprising:
  - 2 a first antenna;
  - 3 a second antenna;
  - 4 an antenna switching function communicatively coupled to the first and second
  - 5 antennas;
  - 6 a first wireless telecommunications function communicatively coupled to the antenna
  - 7 switching function;
  - 8 a second wireless telecommunications function communicatively coupled to the
  - 9 antenna switching function; and
  - 10 an arbitration function, communicatively coupled to the antenna switching function
  - 11 and the first and second wireless telecommunications functions, and adapted to control
  - 12 access to the first and second antennas by the first and second wireless telecommunications
  - 13 functions according to a defined prioritization scheme.
- 1 2. The device of claim 1, wherein either or both of the first or second wireless
- 2 telecommunications functions may require simultaneous access to both the first and second
- 3 antennas.
- 1 3. The device of claim 1, wherein the first wireless telecommunications function
- 2 comprises a wireless LAN technology.
- 1 4. The device of claim 3, wherein the wireless LAN technology comprises a wireless
- 2 LAN according to IEEE 802.11g standards.

1    5.    The device of claim 3, wherein the wireless LAN technology may require  
2    simultaneous access to both the first and second antennas.

1    6.    The device of claim 1, wherein the second wireless telecommunications function  
2    comprises a Bluetooth wireless technology.

1    7.    The device of claim 1, wherein the antenna switching function is implemented as an  
2    independent structure.

1    8.    The device of claim 1, wherein the antenna switching function is integrated with the  
2    arbitration function.

1    9.    The device of claim 1, wherein the arbitration function is implemented as an  
2    independent structure.

1    10.   The device of claim 1, wherein the arbitration function is integrated with at least a  
2    portion of either the first or second wireless telecommunications functions.

1    11.   The device of claim 1, wherein the arbitration function is adapted to control access by  
2    forcing radio silence at least one of the first or second wireless telecommunications  
3    functions.

1    12.   The device of claim 1, wherein the defined prioritization scheme comprises an access  
2    contention function.

1    13.   The device of claim 12, wherein one of the first or second wireless  
2    telecommunications functions is adapted to trigger the access contention function.

1    14. A method of providing simultaneous operation of disparate wireless  
2    telecommunication technologies within a single device, comprising the steps of:  
3                providing a device having a plurality of antennas;  
4                providing an antenna switching function communicatively coupled to the plurality of  
5    antennas;  
6                providing a first wireless telecommunications function communicatively coupled to  
7    the antenna switching function;  
8                providing a second wireless telecommunications function communicatively coupled  
9    to the antenna switching function;  
10          providing an arbitration function communicatively coupled to the antenna switching  
11    function and the first and second wireless telecommunications functions;  
12          providing a defined prioritization scheme; and  
13          utilizing the arbitration function to control access to the plurality of antennas by the  
14    first and second wireless telecommunications functions according to the defined  
15    prioritization scheme.

1    15. The method of claim 14, wherein the antenna switching function allocates access to  
2    an antenna by the first or second wireless telecommunications function under control of the  
3    arbitration function.

1    16. The method of claim 14, wherein either or both of the first or second wireless  
2    telecommunications functions may require simultaneous access to multiple antennas.

1    17. The method of claim 14, wherein the step of providing a first wireless  
2    telecommunications function further comprises providing a wireless LAN technology.

1    18. The method of claim 17, wherein the wireless LAN technology comprises wireless  
2    LAN technology according to IEEE 802.11g standards.

1    19. The method of claim 17, wherein the wireless LAN technology may require  
2    simultaneous access to multiple antennas.

1    20. The method of claim 14, wherein the step of providing a second wireless  
2    telecommunications function further comprises providing a Bluetooth wireless technology.

1    21. The method of claim 14, wherein the step of providing an arbitration function further  
2    comprises providing hardware implementing an arbitration function.

1    22. The method of claim 14, wherein the step of providing an arbitration function further  
2    comprises providing software implementing an arbitration function.

1    23. The method of claim 14, wherein the step of utilizing the arbitration function to  
2    control access further comprises utilizing the arbitration function to disable radio  
3    transmission of at least one of the first or second wireless telecommunications functions.

1    24. The method of claim 14, wherein the step of providing a defined prioritization  
2    scheme further comprises providing an access contention function.

1    25. The method of claim 24, wherein one of the first or second wireless  
2    telecommunications functions may initiate the access contention function.

1    26.    The method of claim 24, wherein the step of providing an access contention function  
2    further comprises providing a bias mechanism.

1    27.    The method of claim 26, wherein the step of providing a bias mechanism comprises  
2    providing a bias in favor of the first wireless telecommunications function.

1    28.    The method of claim 26, wherein the step of providing a bias mechanism comprises  
2    providing a bias in favor of the second wireless telecommunications function.

1    29.    The method of claim 14, wherein the step of providing a defined prioritization  
2    scheme further comprises providing first priority to speech communications over one of the  
3    wireless telecommunications functions.

1    30.    The method of claim 14, wherein the step of providing a defined prioritization  
2    scheme further comprises providing for simultaneous transmission by the first and second  
3    wireless telecommunications functions.

1    31.    The method of claim 14, wherein the step of providing a defined prioritization  
2    scheme further comprises providing for simultaneous reception by the first and second  
3    wireless telecommunications functions.